**Anchor Paper Scoring and Rationales**

**Task: Picking Apples**  **Student: A**

| **Criteria** | **Performance Level**  **(Advanced, Proficient, Developing, Emerging)** | **Rationale** |
| --- | --- | --- |
| Mathematical **Understanding** | Proficient | The student demonstrated an understanding of the concept of decomposing five by drawing three red apples and two green apples. |
| Problem Solving | Proficient | The student used a patterning approach to solving this problem. He/she used RGRGR to show the five apples. The strategy used displays an understanding of how five can be decomposed into parts. |
| **Communication**  **and**  **Reasoning** | Proficient | The student communicated his/her thinking process by using a red crayon to show red apples and a green crayon to show green apples. |
| **Representations**  **and**  **Connections** | Proficient | The student used an appropriate representation, labeled accurately, to model his/her solution to the problem. |

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**Task: Picking Apples Student: B**

| **Criteria** | **Performance Level**  **(Advanced, Proficient, Developing, Emerging)** | **Rationale** |
| --- | --- | --- |
| Mathematical **Understanding** | Advanced | The student used mathematical relationships to demonstrate an understanding of all the ways to decompose five. Application of those relationships lead to multiple correct solutions. |
| Problem Solving | Advanced | The student’s problem-solving strategy is efficient as he/she used the commutative property to ensure all the different combinations of five were represented. |
| **Communication**  **and**  **Reasoning** | Advanced | The student’s reasoning for the ways five can be decomposed is organized using the commutative property. |
| **Representations**  **and**  **Connections** | Proficient | The student used color coded pictorial representations to explore and model the combinations for five. |

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**Task: Picking Apples Student: C**

| **Criteria** | **Performance Level**  **(Advanced, Proficient, Developing, Emerging)** | **Rationale** |
| --- | --- | --- |
| Mathematical **Understanding** | Developing | The student demonstrated a partial understanding of the concepts associated with the task by drawing five red apples. He/she was unable to proceed after he/she drew five apples that were all the same color. |
| Problem Solving | Emerging | The student did not have a problem solving strategy. Once he/she drew five red apples, he/she was not able to produce a solution that showed some green and some red apples. |
| **Communication**  **and**  **Reasoning** | Emerging | Once the student had a set of five red apples, he/she was unable to reason that there should be some apples of each color. He/she made random guesses for how many green apples there could be, but he/she could not provide evidence to support the claim. |
| **Representations**  **and**  **Connections** | Developing | The representation used to model the problem was incomplete. The student only showed red apples, and he/she was not able to connect the representation to the context of the problem. |

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**Task: Picking Apples Student: D**

| **Criteria** | **Performance Level**  **(Advanced, Proficient, Developing, Emerging)** | **Rationale** |
| --- | --- | --- |
| Mathematical **Understanding** | Proficient | The student demonstrated an understanding of the concepts and skills associated with this task by showing that five can be decomposed into sets of one and four. |
| Problem Solving | Proficient | The student produced a solution relevant to the problem. The solution displays an understanding that sets of smaller numbers exist inside a number, for example, one way to compose five is with a set of one and four. |
| **Communication**  **and**  **Reasoning** | Proficient | The student communicated his/her thinking by showing four red apples and one green apple. |
| **Representations**  **and**  **Connections** | Proficient | The student’s representation models how the apples in Tom’s bag might look. His/her solution is relevant to the context of the problem. |

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**Task: Picking Apples Student: E**

| **Criteria** | **Performance Level**  **(Advanced, Proficient, Developing, Emerging)** | **Rationale** |
| --- | --- | --- |
| Mathematical **Understanding** | Proficient | The student demonstrated an understanding of the mathematical concept by subtracting the extra apples in order to reach a solution equivalent to five. |
| Problem Solving | Proficient | The student produced a solution relevant to the problem. He/she confirmed the reasonableness of the solution by checking the total and crossing off the apples he/she did not need. |
| **Communication**  **and**  **Reasoning** | Proficient | The student demonstrated reasoning by thinking out loud about the number of apples he/she drew. He/she justified the solution by counting and crossing off the apples that made the set more than five. |
| **Representations**  **and**  **Connections** | Proficient | The student used a representation with accurate labels (green/red crayon) to explore and model the problem. The mathematical connections are relevant to the context of the problem. |

**Anchor Paper Scoring and Rationales**

**Task: Picking Apples Student: F**

| **Criteria** | **Performance Level**  **(Advanced, Proficient, Developing, Emerging)** | **Rationale** |
| --- | --- | --- |
| Mathematical **Understanding** | Emerging | By drawing 14 apples, the student demonstrated no understanding of the concept of decomposing five. He/she did not provide a solution relevant to the problem. |
| Problem Solving | Emerging | The student appeared to have a strategy for solving the problem as he/she drew apples in two different colors; however, the string of seven red and seven green apples did not produce a solution to the problem. |
| **Communication**  **and**  **Reasoning** | Emerging | The student provided no correct reasoning or justification for his/her solution. |
| **Representations**  **and**  **Connections** | Emerging | The student produced a representation that does not model the problem. He/she was unable to make a connection that 14 apples was too many. |